UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2003/01382

June 15, 2004

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers, Portland District
ATTN: Kathryn L. Harris
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery and Conservation Management Act Essential Fish Habitat Consultation for the Strome Park Boat Ramp Replacement Project, Siletz River, Lincoln County, Oregon (Corps No. 20030218)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of issuing a permit under section 10 of the Rivers and Harbors Act and under section 404 of the Clean Water Act to authorize construction of the Strome Park Boat Ramp Replacement Project in Lincoln County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of the Oregon Coast coho salmon (*Oncorhynchus kisutch*) evolutionarily significant unit, which are listed under the ESA. As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with nondiscretionary terms and conditions that are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and implementing regulations (50 CFR Part 600). The proposed action may adversely affect designated EFH for coho and Chinook salmon *(O. tshawytscha*). As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.

If you have any questions, please contact Ms. Bridgette Lohrman, Natural Resource Specialist, of my staff in the Oregon Coast/Lower Columbia River Habitat Branch of the Oregon State Habitat Office at 503.230.5422.

Sincerely,

Russell M Strach for

D. Robert Lohn
Regional Administrator

Endangered Species Act - Section 7 Consultation Biological Opinion

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Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Strome Park Boat Ramp Replacement Project,
Siletz River, Lincoln County, Oregon
(Corps No. 20030218)

Agency:	U.S. Army Corps of Engineers
Consultation Conducted By:	NOAA's National Marine Fisheries Service, Northwest Region
Date Issued:	June 15, 2004
Issued by:	Russell M Strach for _____ D. Robert Lohn Regional Administrator
Refer to:	**2003/01382**

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1. INTRODUCTION

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1544), as amended, establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with U.S. Fish and Wildlife Service and NOAA's National Marine Fisheries Service (NOAA Fisheries), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitats. This biological opinion (Opinion) is the product of an interagency consultation pursuant to section 7(a)(2) of the ESA and implementing regulations found at 50 CFR 402.

The analysis also fulfills the essential fish habitat (EFH) requirements under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).

1.1 Consultation History

On November 3, 2003, NOAA Fisheries received a letter and a biological assessment (BA) from the U.S. Army Corps of Engineers (Corps) requesting formal consultation pursuant to the ESA for the issuance of a permit under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act to the Lincoln County Parks Department to allow the replacement of the Strome Park boat ramp at river mile (RM) 16.3 of the Siletz River in Lincoln County, Oregon. The Corps determined the proposed action was likely to adversely affect Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*). The Corps also found the proposed project may adversely affect designated EFH for coho and Chinook salmon (*O. tshawytscha*).

1.2 Proposed Action

The proposed action is the issuance of a permit by the Corps under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act to authorize the replacement of an existing boat ramp at Strome Park on the Siletz River near RM 16.3. The BA states that the existing one-lane boat ramp serves 2,000 launches and retrievals per year and replacing this ramp with a new ramp of similar capacity would not significantly change the number of visits to the facility, but would maintain safe public boating access at the park. The existing boat ramp (12 feet wide by 115 feet long) would be removed and the new boat ramp (20 feet wide and 221.1 feet long) would be installed in the same location. The removal of the existing asphalt ramp would require removal of 85 cubic yards of asphalt, rock, and riprap below ordinary high water (OHW), with disposal in an upland location. To accommodate the new boat ramp, the bankline cut for the existing ramp would be enlarged because of the overall increase in size (3,042 square feet) of the

new ramp. Up to 725 cubic yards of silty soil (145 cubic yards above OHW and 580 cubic yards below OHW) would be removed from the bank beside the ramp and disposed of in an offsite, upland location. The total area of the excavation would be 0.14 acres. The excavation area would be sloped to establish a 15% grade from the top of the ramp to the toe. A maximum of 125 feet of bankline would be disturbed.

The lower 60 lineal feet of the ramp would consist of 15 fully-cured, pre-cast concrete planks, while the upper portion of the replacement ramp would consist of cast-in-place concrete supported by crushed base rock, placed to a minimum depth of 6 inches. Approximately 585 cubic yards of the base rock would be below OHW. Sixty-five cubic yards of riprap would be placed around the new boat ramp in a trench 4 feet wide and 2 feet deep to prevent erosion. Class 100 riprap would be placed below OHW along the sides of the ramp and Class 700 riprap would be placed at the toe of the ramp. No uncured concrete would be allowed to enter the water.

Six trees would be removed from the site, including two willows, three shore pine, and one alder. To replace these trees and offset potential negative habitat effects of riprap replacements, plantings of willow, vine maple, and alder are proposed for 3,400 square feet of the riverbank.

The applicant also intends to pave the existing gravel parking lot. Paving of the existing gravel parking lot was not described in the BA, however, the paving of the parking lot would occur during the same timeframe as the boat ramp replacement. The action of paving the parking lot and replacing the boat ramp are considered to be interdependent by NOAA Fisheries, thus, the action will be considered in this Opinion. Paving of the gravel parking lot would increase the impervious surface at Strome Park by approximately 3,250 square feet. The western edge of the paved parking lot would be approximately 70 feet from OHW.

The applicant proposes to conduct all work during the recommended Oregon Department of Fish and Wildlife (ODFW) in-water work window for the Siletz River of July 1 through August 31. The actions of replacing the boat ramp and paving the parking lot would not exceed 60 days. In-water work would occur on days with minus tides and is expected to take 5 to 8 days.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

NOAA Fisheries listed OC coho salmon as threatened under the ESA on August 10, 1998 (63 FR 42587), and issued protective regulations under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Critical habitat is currently not designated or proposed for this species.

The objective of this Opinion is to determine whether the proposed Strome Park boat ramp replacement, as proposed by the Lincoln County Parks Department, is likely to jeopardize the continued existence of OC coho salmon and adversely affect EFH for coho and Chinook salmon.

2.1.1 Biological Information

Although there are currently limited data to assess population numbers or trends, all coho salmon stocks comprising the OC coho salmon evolutionarily significant unit (ESU) are depressed relative to past abundance. The status and relevant biological information concerning OC coho salmon are well described in the proposed and final rules from the Federal Register (60 FR 38011, July 25, 1995; and 63 FR 42587, August 10, 1998, respectively), and Weitkamp *et al.* (1995).

Estimated escapement of coho salmon in coastal Oregon was about 1.4 million fish in the early 1900s, with harvest of nearly 400,000 fish (Weitkamp *et al.* 1995). From about 1965 to roughly 1975, abundance of wild coho salmon spawners in Oregon coastal streams declined and has fluctuated at a low level since that time (Nickelson *et al*. 1992). Despite better observed spawning escapements in 2001 and 2002, population trends remain low (Table 1). Contemporary production of coho salmon may be less than 10% of the historic production (Nickelson *et al*. 1992). Average spawner abundance has been relatively constant since the late 1970s, but preharvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al*. 1995).

The bulk of production for the OC coho salmon ESU is skewed to its southern portion, where the coastal lake systems (*e.g.*, Tenmile, Tahkenitch, Siltcoos basins) and the Coos and Coquille Rivers are more productive. OC coho salmon escapements within the southern basins have averaged 60.2% of total escapement over the 1990 to 1999 period of record (Jacobs *et al.* 2001). OC coho salmon escapements within the northern and mid-coast basins have averaged 39.8% of total escapement over the 1990 to 1999 period of record. Reasons for this high productivity are probably related to additional rearing opportunities associated with the lakes in the southern basins, and the relative sizes of the watersheds within these respective basins (Jacobs *et al.* 2001). The coho salmon population in the Siletz basin has been characterized as depressed (*e.g.*, spawning habitat underseeded, declining trends, recent escapements below long-term average) and at moderate risk of extinction (Weitkamp *et al.* 1995).

A recent estimate of average annual abundance of wild coho salmon spawners in the Siletz basin is 1,228 fish (1990 to 2002) with a range of 336 spawners (1997) to 3,553 spawners (2000) (ODFW 2003) (Table 1). Though final estimates of 2003 returns are not available, preliminary information indicate continued increases in coho salmon spawners (ODFW 2003). Recent increases have been attributed to conservation efforts (*e.g*., habitat restoration, harvest restrictions) and favorable ocean conditions, which are known to be cyclic.

Table 1. Estimated spawning populations for naturally-produced coho salmon in the Siletz Basin (source: ODFW 2003)

	Estimated Wild Coho Population		
	Select Project Area Basin		OC ESU
Year	Number of fish	Est. % of ESU	Number of fish
1990	441	3	16,510
1991	984	3	29,078
1992	2,447	6	38,604
1993	400	1	44,266
1994	1,200	3	37,477
1995	607	1	41,303
1996	763	1	59,453
1997	336	2	14,068
1998	394	2	19,816
1999	706	2	34,646
2000	3,553	7	54,085
2001	1,437	1	147,981
2002	2,700	1	231,411
2003*	10,010	5	212,894
Average	1,856	3	70,114

*Estimates for 2003 are preliminary

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for freshets before entering rivers. In general, adults return to the Siletz River basin from October through January, with peak upstream migration usually occurring in October when the fall rains return. The *Upper Siletz Watershed Analysis* (USDI-BLM 1996) indicates Siletz River run timing can be delineated into two distinct periods, one dominated by hatchery origin stock and the other by a wild stock. Fish of hatchery origin typically migrate upstream from October to late November in the Siletz River, while wild coho salmon migrate upstream from early December to early February (USDI-BLM 1996). OC coho salmon spawn in the Siletz River basin from early November through early January with peak spawning occurring late November. Intragravel residency (egg to fry) varies greatly between river basins and reaches, and is largely dependent on substrate composition and water temperature (Sandercock 1991). No specific information is available on intragravel residence timing in project area watersheds. However, a study done in Oregon coastal streams found an average incubation period of 110 days, with emergence typically occurring two to three weeks following hatch (Sandercock 1991). This suggests a 4 to 5 month intragravel residency period. Juvenile coho

salmon rear for 1 year in freshwater before migrating to the ocean. Juvenile OC coho salmon migrate out of the Siletz River basin as smolts between mid-March and mid-June. Peak outmigration typically occurs in late April to early May (Weitkamp *et al.* 1995).

Table 2. Life history timing for OC coho salmon in the Siletz River (Weitkamp *et al*. 1995, Sandercock 1991). Dark shading indicates peak occurrence of life history event. Exceptions may exist that would allow individual fish to fall outside of the indicated periods.

Period of Proposed Action or Life History Event	Calendar Year (month)											
	J	F	M	A	M	J	J	A	S	O	N	D
Proposed in-water work												
River Entry												
Spawning												
Intragravel Development[(1)]												
Juvenile Rearing												
Juvenile Out-migration												

(1) Based on spawning period (Weitkamp *et al*. 1995) and a 4-5 week intergravel development period (Sandercock 1991).

2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed species' life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, it must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. Because critical habitat is not currently designated for OC coho salmon, NOAA Fisheries did not include a separate critical habitat analysis.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. Essential habitat features for survival and recovery of coho salmon include: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, adult holding, and juvenile rearing. In spite of increased returns in recent years, the status of OC coho salmon, based on their risk of extinction, has not significantly improved since the species was listed. This elevated extinction risk is largely reflective of the cyclic nature of oceanic conditions, freshwater habitat conditions that are degraded and not properly functioning, and hatchery practices that threaten the species' ability to survive the natural range of habitat variability.

2.1.4 Environmental Baseline

In step 2 of NOAA Fisheries' analysis, we evaluate the relevance of the environmental baseline in the action area to the species' current status. The environmental baseline is an analysis of the effects of past and ongoing human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the purposes of this consultation, the action area includes the Siletz River at approximately river mile 16.3 including the streambed, streambank, water column, and adjacent riparian zone extending 100 feet upstream and 300 feet downstream of the construction area.

Land uses in the action area include rural residential, agricultural, forestry, and recreation. Riparian areas and stream channels in coastal watersheds have been damaged by development activities related to these land uses as well as by the use of splash dams, stream cleaning, and gravel mining (FEMAT 1993, Botkin *et al*. 1995, OCSRI 1997). Habitat changes that have

contributed to the decline of OC coho in the action area include: (1) Reduced biological, chemical, and physical connectivity between streams, riparian areas, floodplains, and uplands; (2) elevated fine sediment loads; (3) reduced instream and riparian large woody debris which traps sediments, stabilizes streambeds and streambanks, and forms complex instream structures; (4) reduced vegetative canopy; (5) changed stream channel morphology (*e.g.*, increased width-to-depth ratios and entrenchment); (6) degraded water quality; (7) altered base and peak stream flows; and (8) fish passage impediments (USFS 1996, OCSRI 1997).

Using procedures in NMFS (1996), the BA identified the following environmental baseline indicators as at risk or not properly functioning in the action area: Temperature, turbidity, chemical contamination/nutrients, substrate, large woody debris, pool frequency, pool quality, off-channel habitat, refugia, width-to-depth ratio, floodplain connectivity, peak/base flows, drainage network, road density, and riparian reserves. The Siletz River, from river mile 7 to 46.8, is currently listed as a Water Quality Limited Stream on the 2002 303(d) list by the Oregon Department of Environmental Quality (ODEQ 2002) for exceeding summer stream temperature requirements.

Based on the best information available on the current status of OC coho salmon, and NOAA Fisheries' assumptions given the information available regarding population status, population trends, and the poor environmental baseline conditions within the action area, the environmental baseline does not meet all of the biological requirements for OC coho salmon.

2.1.5 Effects of Proposed Action

In step 3 of NOAA Fisheries' analysis, we identify and evaluate the potential effects of the proposed action on the listed species with consideration of the existing environmental baseline in the action area, including whether the proposed action contributes to or maintains a degraded baseline condition. NOAA Fisheries believes the actions associated with the replacement of the Strome Park boat ramp, including paving the gravel parking lot, is likely to adversely affect OC coho in the Siletz River because of: (1) An increase in turbidity; (2) a potential increase in stream temperature; (3) chemical contamination of the waterway; and (4) potential changes in hydrology, including peak flows.

<u>Turbidity</u>
Removal of bottom substrate at the existing boat ramp site to establish proper elevation and grade for installation of the replacement ramp, placement of aggregate fill material as a base for the new ramp, placement of the pre-cast concrete planks at the lower end of the new boat ramp, and placement of riprap material along the edges of the new ramp will disturb stream sediment and result in an increase in stream turbidity in the Siletz River at the project site and possibly for a short distance downstream

Behavioral avoidance of turbid waters by juvenile salmonids may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes

(McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, except when the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987).

Fish that remain in turbid, or elevated total suspended solids, waters may have reduced predation from piscivorus fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this may provide a beneficial trade-off (*e.g.*, enhanced survival) to the cost of potential physical effects (*e.g.*, reduced growth). Turbidity levels of about 23 Nephalometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical determinant of the occurrence and magnitude of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids appear to be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjornn and Reiser 1991). However, research indicates that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

To minimize exposure of salmonids to potentially harmful turbid waters, the project would include two measures to reduce adverse effects. First, the project would be restricted to conducting in-water work during low flow periods of July 1 through August 31. The in-water work is expected to occur for 5 to 8 days and would take place during minus tides. During this work window established by the ODFW, juvenile salmonids would most likely be exploiting off-channel habitats for feeding and rearing, if they have not migrated downriver to the estuary for the summer. As for adult coho salmon, they use the mainstem of the Siletz River for migration but would not be returning to spawn until mid-November (Nickelson 2001). Secondly, since some salmonids may be present in the action area, protective measures are necessary to minimize turbidity. Before beginning soil-disturbing activities at the project site, silt fencing and floating silt curtains would be installed around the perimeter of the project area and at other places as appropriate. Use of these sediment control measures are expected to minimize transport of sediment and resultant turbidity increases in the Siletz River at the project site and downstream, and to minimize the area of potential increased turbidity.

Temperature

The new boat ramp would be 8 feet wider and 106.1 feet longer than the existing boat ramp, causing an overall increase in concrete surface of 3,042 square feet. The approximate area of concrete that would be exposed and submerged on average considering a mean high water (MHW) of 3.48 National Geodetic Vertical Datum(NGVD) and a MLW of -1.90 NGVD would be 700 square feet. Rock may function as a conductive heat source. Spence *et al*. (1996) states that the nature of the substrate may affect the amount of heat transfer, and bedrock more efficiently transfers heat than gravels. Therefore, it can be deduced that the greater the mass available to receive solar radiation the greater the heating potential. Heat collected by the rock

during the day elevates night time temperatures thereby dampening diel temperature fluctuations. This effect is unquantifiable at this location, yet it is still a potential localized effect.

Another consequence of installing a larger boat ramp is the increased footprint of the ramp in the riparian area. A maximum of 125 feet of bankline would be disturbed with an additional 10-foot wide zone of vegetation clearing and construction disturbance around the excavation area. This disturbance would result in six trees being removed, including two willows, three shore pine and one forked alder. The work to be conducted in the riparian area would remove shoreline vegetation which provide some shade to the river.

The Siletz River, including the project location, is listed on the DEQ 303(d) list for summer stream temperature impairment. In the attempt to minimize any further contribution to an increase in stream temperature of the Siletz River, the applicant has reduced the amount of riprap used in the project. Also, the applicant would plant native trees in the riparian area at a ratio of 5:1 to replace each tree removed during the project. This would total 35 new trees, including 12 willows, 11 vine maples, and 12 alders to compensate for the disturbance of the riparian habitat. For the near term, these trees would not offset the riparian disturbance. However, the applicant would maintain appropriate materials to protect saplings from deer or rodent damage to ensure their survival. NOAA Fisheries does not expect the proposed action in and of itself to result in a measurable increase in stream temperature, but would contribute to any cumulative effect of upgrading the boat ramp within the watershed.

Chemical Contamination

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of heavy equipment requires the use of fuels and lubricants which, if spilled in the stream channel or riparian area, can injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons (PAHs) which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). The potential for pollutants to enter the stream would be minimized by equipment cleaning, maintenance, refueling and related activities being confined to a designated staging area, not less than 150 feet from the OHW mark and by having a spill-control plan with spill-control materials on site.

Proposed improvements to the boat ramp and paving of the gravel parking lot at Strome Park could result in increased use by recreationists at the site. Increased motorized boating could increase the potential for introduction of chemical contaminants (petroleum products) to the river. As mentioned above, petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain PAHs which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms. Parking lots have the potential to indefinitely transmit contaminants to waterbodies, if a hydrologic connection (*e.g.* ditch or sheet flow) exists. The applicant has not proposed any stormwater treatment measure to minimize the potential for chemical contamination of the Siletz River.

Increased Peak Flows

Reduction in the natural drainage network from increased impervious surface area, as proposed in this project for the boat ramp and paved parking lot, shrinks the lag time between a rainfall event and the point of peak discharge of stormwater into a stream (NOAA Fisheries 2003). This reduction often equates to heightened stormwater peak discharge which cause streambed and streambank scour, mobilize and remove large wood, and extend duration of channel forming flows. This change to the natural hydrology of the stream can have adverse effects on all life stages of salmonids, however, rearing juveniles are particularly vulnerable to being swept downstream during high flows of extended duration.

2.1.6 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." This is step 4 in NOAA Fisheries' analysis process.

The action area includes significant tracts of private non-industrial lands and private industrial forestry lands. Land use on these non-federal lands include timber production, agriculture, and rural development. Chemical fertilizers or pesticides are used on many of these lands, but no specific information is available regarding their degree of use within the project area. Furthermore, NOAA Fisheries does not consider the rules governing these land uses on these non-federal lands within Oregon to be sufficiently protective of watershed, riparian, and stream habitat functions to support the survival and recovery of listed Pacific salmon species. Therefore, these habitat functions likely remain at risk due to future activities on non-federal lands within the affected river basin.

Non-federal activities within the action area are likely to increase with a projected 13.5% increase in human population in Lincoln County over the next 22 years in Oregon (ODAS 2003). Thus, NOAA Fisheries assumes that future private and state actions will continue to occur at similar levels within the action area and will increase gradually over time as population density increases. Each subsequent action may have only a small incremental effect, but taken together they may have a significant effect that would further degrade the watershed's environmental baseline and undermine the improvements in habitat conditions necessary for listed species to survive and recover.

2.1.7 Conclusion

The final step in NOAA Fisheries' approach to determine jeopardy is to determine whether the proposed action is likely to appreciably reduce the likelihood of species survival or recovery in the wild. NOAA Fisheries has determined that when the effects of the proposed action addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, it is not likely to jeopardize the continued existence of listed OC coho salmon. NOAA Fisheries used the best available scientific and commercial data to apply its

jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects.

These conclusions are based on the following considerations: (1) In-water work would occur when juvenile coho salmon presence is reduced, and adults and eggs are not present; (2) any increases in sedimentation and turbidity in the project area would be short-term and minor in scale, and would not significantly degrade existing conditions of stream substrate in the action area; (3) planting willow, vine maple, and alder at a 5:1 ratio of the current density of riparian trees at the project location would mitigate riparian habitat disturbance; and (4) the proposed action is not likely to impair properly functioning habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.1.8 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or, (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

To reinitiate consultation, the Corps must contact the Oregon State Habitat Office of NOAA Fisheries at 525 NE Oregon Street, Suite 500, Portland, Oregon 97232-2778, and refer to NOAA Fisheries No.: 2003/01382.

2.2 Incidental Take Statement

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." [16 USC 1532(19)] Harm is defined by regulation as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." [50 CFR 222.102] Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering." [50 CFR 17.3] Incidental take is defined as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." [50 CFR 402.02] The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

An incidental take statement specifies the effect of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize adverse effects and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of ESA-listed OC coho salmon. Harm or harassment of juvenile OC coho salmon may result from increased turbidity in the Siletz River from construction activities, in-water work, and runoff from impervious surfaces including the proposed boat ramp and the paved parking lot. In-water work associated with boat ramp installation could also result in minor lethal take of juvenile OC coho salmon. However, lethal take is not expected, because the fish would avoid the area when in-water work is in progress (approximately 5 to 8 days). Even though NOAA Fisheries expects some low level of incidental take from turbidity and runoff from impervious surfaces, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected amount of take as "unquantifiable." Based on the information provided by the Corps and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take, predominantly in non-lethal form, could occur as a result of the action covered by this Opinion. The extent of take will be limited to the action area, including the water column, streambed, streambank, and adjacent riparian zone at approximately river mile 16.3 of the Siletz River, including 300 feet downstream and 100 feet upstream of the construction area.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of OC coho salmon resulting from implementation of this Opinion.

1. Avoid or minimize incidental take of OC coho from construction-related activities by applying permit conditions that require completion of construction, operation and maintenance actions with minimum harm to aquatic and riparian systems, and provide compensatory mitigation to offset any long-term adverse effects.

2. Avoid or minimize incidental take from use of in-water structures (boat ramp) by applying conditions that avoid or minimize adverse effects to riparian and aquatic systems.
3. Monitor the effectiveness of the conservation measures (*e.g.* riparian plantings, erosion control measures) in minimizing take of OC coho salmon.

2.2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of the terms and conditions within this Opinion will further reduce the risk of adverse effects to OC coho salmon. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (general conditions for construction, operation and maintenance), the Corps shall ensure that:

    a. Minimum area. Confine construction impacts to the minimum area necessary to complete the project.
    b. Timing of in-water work. Complete all work below the bankfull elevation between July 1 and August 31, unless otherwise approved in writing by NOAA Fisheries.
    c. Cessation of work. Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
    d. Pollution and Erosion Control Plan. Prepare and carry out a written pollution and erosion control plan to prevent pollution caused by surveying or construction operations. Submit a copy of the written plan to the Corps and to the Oregon State Habitat Office of NOAA Fisheries, at the address above, before beginning work below bankfull elevation.
        i. Plan Contents. The pollution and erosion control plan will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
            (1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
            (2) Practices to prevent erosion and sedimentation associated with construction sites, equipment and material storage sites, fueling operations, and staging areas.
            (3) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.
            (4) A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
            (5) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(6) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.[1]

(1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.

e. Construction discharge water. Treat all discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows.

i. Water quality. Design, build, and maintain facilities to collect and treat all construction discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals, and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

iii. Pollutants. Do not allow pollutants including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours to contact any wetland or the 2-year floodplain.

f. Preconstruction activity. Complete the following actions before significant[2] alteration of the project area.

i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

(1) A supply of sediment control materials (*e.g.*, silt fence, straw bales[3]).

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[1] 'Working adequately' means that project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream of the turbidity causing activity.

[2] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

[3] When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.

(2) An oil-absorbing, floating boom whenever surface water is present.

iii. Temporary erosion controls. All temporary erosion controls will be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

g. Heavy Equipment. Restrict use of heavy equipment as follows.

i. Choice of equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally sized, low ground pressure equipment).

ii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain and store vehicles as follows.

(1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.

(2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland, unless otherwise approved in writing by NOAA Fisheries.

(3) Inspect all vehicles operated within 150 feet of any stream, waterbody or wetland daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by Corps or NOAA Fisheries.

(4) Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below bankfull elevation until all visible external oil, grease, mud, and other visible contaminates are removed.

h. Site preparation. Conserve native materials for site restoration.

i. If possible, leave native materials where they are found.

ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iii. Stockpile any large wood,[4] native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

i. Stormwater management. Prepare and carry out a written stormwater management plan for any project that will produce a new impervious surface or a land cover conversion that slows the entry of water into the soil. Submit a copy

[4] For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

of the written plan to the Corps and to the Oregon State Habitat Office of NOAA Fisheries, at the address above, before beginning work below bankfull elevation.

i. Plan contents. The goal is to avoid and minimize adverse effects due to the quantity and quality of stormwater runoff for the life of the project by maintaining or restoring natural runoff conditions. The plan will meet the following criteria and contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

(1) A system of management practices and, if necessary, structural facilities, designed to complete the following functions.

(a) Minimize, disperse and infiltrate stormwater runoff onsite using sheet flow or pervious asphalt across permeable vegetated areas to the maximum extent possible without causing flooding, erosion impacts, or long-term adverse effects to groundwater.

(b) Pretreat stormwater from pollution generating surfaces before infiltration or discharge into a freshwater system as necessary to minimize any nonpoint source pollutant (*e.g.*, debris, sediment, nutrients, petroleum hydrocarbons, metals) likely to be present in the volume of runoff predicted from a 6-month, 24-hour storm.[5]

(c) Ensure that the duration of post project discharge matches the pre-developed discharge rates from 50% of the 2-year peak flow up to the 50-year peak flow.

(2) For projects that require engineered facilities to meet stormwater requirements, use a continuous rainfall/runoff model, if available for the project area, to calculate stormwater facility water quality and flow control rates.

(3) Use permeable pavements for load-bearing surfaces, including multiple-use trails, to the maximum extent feasible based on soil, slope, and traffic conditions.

[5] A 6-month, 24-hour storm may be assumed to be 72% of the 2-year, 24-hour amount. See, Washington State Department of Ecology (2001), Appendix I-B-1.

(4) Install structural facilities outside wetlands or the riparian buffer area[6] whenever feasible, otherwise, provide compensatory mitigation to offset any long-term adverse effects.

(5) Document completion of the following activities according to a regular schedule for the operation, inspection and maintenance of all structural facilities and conveyance systems, in a log available for inspection on request by the Corps and NOAA Fisheries.

(a) Inspect and clean each facility as necessary to ensure that the design capacity is not exceeded, heavy sediment discharges are prevented, and whether improvements in operation and maintenance are needed.

(b) Promptly repair any deterioration threatening the effectiveness of any facility.

(c) Post and maintain a warning sign on or next to any storm drain inlet that says, as appropriate for the receiving water, 'Dump No Waste - Drains to Ground Water, Streams, or Lakes.'

(d) Only dispose of sediment and liquid from any catch basin in an approved facility.

ii. Runoffs/discharge into a freshwater system. When stormwater runoff will be discharged directly into fresh surface water or a wetland, or indirectly through a conveyance system, the following requirements apply.

(1) Maintain natural drainage patterns and, whenever possible, ensure that discharges from the project site occur at the natural location.

(2) Use a conveyance system comprised entirely of manufactured elements (*e.g.*, pipes, ditches, outfall protection) that extends to the ordinary high water line of the receiving water.

(3) Stabilize any erodible elements of this system as necessary to prevent erosion.

(4) Do not divert surface water from, or increase discharge to, an existing wetland if that will cause a significant adverse effect to wetland hydrology, soils or vegetation.

[6] For purposes of this Opinion only, 'riparian buffer area' means land: (1) Within 150 feet of any natural water occupied by listed salmonids during any part of the year or designated as critical habitat; (2) within 100 feet of any natural water within 1/4 mile upstream of areas occupied by listed salmonids or designated as critical habitat and that is physically connected by an above-ground channel system such that water, sediment, or woody material delivered to such waters will eventually be delivered to water occupied by listed salmon or designated as critical habitat; and (3) within 50 feet of any natural water upstream of areas occupied by listed salmonids or designated as critical habitat and that is physically connected by an above-ground channel system such that water, sediment, or woody material delivered to such waters will eventually be delivered to water occupied by listed salmon or designated as critical habitat. 'Natural water' means all perennial or seasonal waters except water conveyance systems that are artificially constructed and actively maintained for irrigation.

(5) The velocity of discharge water released from an outfall or diffuser port may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

j. Compensatory mitigation. Plant a mixture of willow, vine maple, and alder, as described in the Proposed Action (section 1.2, above), to compensate for the potential loss of instream and near-stream habitat associated with the installation of the replacement boat ramp.

k. No herbicide application is permitted under this Opinion for the action area.

l. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this action.

2. To implement reasonable and prudent measure #2 (boat ramp), the Corps shall ensure that:

a. Educational Signs Posted. Because the best way to minimize adverse effects caused by boating is to educate the public about pollution and its prevention, post the following information on a permanent sign that will be maintained at each permitted facility used by the public (such as marinas, public boat ramps, *etc.*).

i. A description of the ESA-listed salmonids which are or may be present in the project area.

ii. Notice that the adults and juveniles of these species, and their habitats, are be protected so that they can successfully migrate, spawn, rear, and complete other behaviors necessary for their recovery.

iii. Lack of necessary habitat conditions may result in a variety of adverse effects including direct mortality, migration delay, reduced spawning, loss of food sources, reduced growth, reduced populations and decreased productivity.

iv. Therefore, all users of the facility are encouraged or required to:

(1) Follow procedures and rules governing use of sewage pump-out facilities.

(2) Minimize the fuel and oil released into surface waters during fueling, and from bilges and gas tanks.

(3) Avoid cleaning boat hulls in the water to prevent the release of cleaner, paint and solvent.

(4) Practice sound fish cleaning and waste management, including proper disposal of fish waste.

(5) Dispose of all solid and liquid waste produced while boating in a proper facility away from surface waters.

3. To implement reasonable and prudent measure #3 (monitoring), the Corps shall ensure that:

a. Written planning requirements. Before beginning any work below bankfull elevation,[7] the permittee will provide a copy of the written plans for stormwater management, to the Oregon State Habitat Office of NOAA Fisheries at the following address. Plan requirements are described in Term and Condition #1.

Director, Oregon State Habitat Office
Habitat Conservation Division
National Marine Fisheries Service
Attn: **2003/01382**
525 NE Oregon Street
Portland, OR 97232

b. Within 30 days of completing the project, submit a monitoring report to NOAA Fisheries describing the Corps' success meeting these terms and conditions. This report will consist of the following information:

i. Project identification
   (1) Project name.
   (2) Project location.
   (3) Corps contact person.
   (4) Starting and ending dates for work completed.

ii. Habitat conditions. Photos of habitat conditions at the project and any compensation site or sites, before, during, and after project completion.[8]
   (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
   (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

iii. Additional project-specific data, as appropriate for each phase of the project.

iv. Site restoration:
   (1) Planting composition and density.
   (2) Success of riparian plantings.
   (3) Site preparation.
      (a) Total cleared area – riparian and upland.
      (b) Total new impervious area.

[7] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

[8] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

c. Salvage notice. Include the following notice with each permit issued, or in writing to each party that will supervise completion of the action.

> NOTICE. If a sick, injured or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at 360.418.4246. The finder must take care in handling of sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

d. Monitoring reports will be submitted to:

> NOAA Fisheries
> Oregon State Habitat Office
> **Attn: 2003/01382**
> 525 NE Oregon Street, Suite 500
> Portland, OR 97232-2778

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrates" include sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;

- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;

- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.2 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for Federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other waterbodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to *The Pacific Coast Groundfish Management Plan* (PFMC 1998a) and NOAA Fisheries' *Essential Fish Habitat for West Coast Groundfish Appendix* (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the *Coastal Pelagic Species*

Fishery Management Plan (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). The assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.3 Proposed Action

The proposed action is detailed above in sections 1.2. This area has been designated as EFH for various life stages of Chinook and coho salmon.

3.4 Effects of Proposed Action

As described in detail in section 2.1.5, the proposed activities are likely to cause elevated concentrations in total suspended solids and possible chemical contamination which may result in a temporary loss of benthic habitat for macroinvertebrates and rearing habitat for Chinook and coho salmon.

3.5 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect EFH for Chinook and coho salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the Corps and all of the terms and conditions, except those pertaining to monitoring, contained in section 2.2.3 are applicable to EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) require the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The Corps must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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Section 7(a)(2) of the ESA requires biological opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

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